Final
Site-Specific Safety and Health Plan Attachment
Former Range 43, Parcel 97Q,
Range, Choccolocco Corridor, Parcel 144Q-X,
Impact Area, Choccolocco Corridor, Parcel 147Q-X
Fort McClellan
Calhoun County, Alabama

Prepared for:

U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street, Mobile,
Alabama 36602

Prepared by:

IT Corporation
312 Directors Drive
Knoxville, Tennessee 37923

Task Order CK10
Contract No. DACA21-96-D-0018
IT Project No. 796887

April 2002

The following Site-Specific Safety and Health Plan (SSHP) has been designed for the methods presently contemplated the company for execution of the proposed work. Therefore, the SSHP may not be appropriate if the work is not performed by or using the methods presently contemplated by the company. In addition, as the work is performed, conditions different from those anticipated may be encountered and the SSHP may have to be modified. Therefore, the company only makes representations or warranties as to the adequacy of the SSHP for currently anticipated activities and conditions.

This Site-Specific Safety and Health Plan must be used in conjunction with the Installation-Wide Safety and Health Plan and Installation-Wide Ordnance and Explosives Management Plan, Fort McClellan, Alabama.

Site-Specific Safety and Health Plan Attachment Approval
Fort McClellan, Calhoun County, Alabama

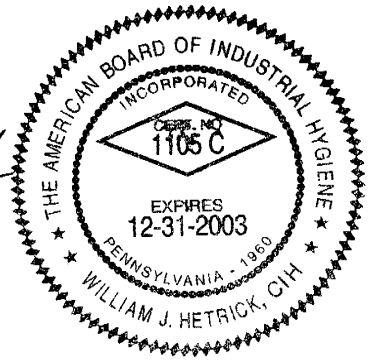
I have read and approve this site-specific safety and health plan (SSHP) attachment for Parcels 97Q, 144Q-X, and 147Q-X investigations, Fort McClellan,Calhoun County, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation procedures.

Stephen G. Moran for

Jeanne Yacoub, PE
Project Manager

4/3/02
Date

William J. Hetrick



William J. Hetrick, CIH
Health & Safety Manager

4/2/02
Date

Stephen G. Moran for

Jeff Tarr
Site Coordinator

4/3/02
Date

Acknowledgements

The approved version of this site-specific safety and health plan (SSHP) attachment for the Parcels 97Q, 144Q-X, and 147Q-X investigations, Fort McClellan, Calhoun County, Alabama has been provided to the site coordinator. I acknowledge my responsibility to provide the site coordinator with the equipment, materials, and qualified personnel to implement fully all safety requirements in this SSHP attachment. I will formally review this plan with the health and safety staff every 6 months until project completion.

Stephen G. Moran for J. Yacoub   4/3/02

Project Manager   Date

I acknowledge receipt of this SSHP attachment from the project manager, and that it is my responsibility to explain its contents to all site personnel and cause these requirements to be fully implemented. Any change in conditions, scope of work, or other change that might affect worker safety requires me to notify the project manager and the health and safety manager.

Stephen G. Moran for J. Tan   4/3/02

Site Coordinator   Date

Site-Specific Safety and Health Plan
Acknowledgement Form

I have been informed of, and will abide by the procedures set forth in this site-specific safety and health plan (SSHP) attachment for work activities on the Parcels 97Q, 144Q-X, and 147Q-X investigations, Fort McClellan, Calhoun County, Alabama.

Printed Name	***Signature***	***Representing***	***Date***

Fort McClellan Gate Hours

Galloway Gate	Galloway Road. Open 6 am to 6 pm Monday through Friday
Baltzell Gate	Baltzell Road. Open 24 hours daily, 7 days a week.

Fort McClellan Project Emergency Contacts

Range Control Office (Main Post)	(256) 848-6772
Fire Department (off post)	911
Ambulance (off post)	911
Regional Medical Center	(256) 235-5121
Military Police (SSG Busch)	(256) 848-5680, 848-4824
DOD Guard Force (Mr. Bolton)	(256) 848-5680, 848-4732
Anniston Police Department	(256) 238-1800
Chemical Agent Emergencies	(256) 895-1598
(Mike Smith, CEHNC)	cell phone (256) 759-3931
UXO Emergencies	(256) 895-1598
(Mike Smith, CEHNC)	cell phone (256) 759-3931
UXO Non emergencies/Reporting Only (Ronald Levy)	(256) 848-6853
Baltzell Gate Guard Shack	(256) 848-5693, 848-3821
National Response Center & Terrorist Hotline	(800) 424-8802
Poison Control Center	(800) 222-1222
EPA Region IV	(404) 562-8725
Ronald Levy, Chief, FTMC Environmental Management	(256) 848-6853
Ellis Pope, U.S. Army Corps of Engineers	(251) 690-3077
Jeanne Yacoub, IT Project Manager	(770) 663-1429
Bill Hetrick, IT H&S Manager	(865) 692-3571, and pager (888) 655-9529
Jeff Tarr, IT Site Manager	(256) 848-3482, 3499
Mike Moore, Fort McClellan Safety Office	(256) 848-5433
Dr. Jerry H. Berke, Health Resources Occupational Physician	(800) 350-4511

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1.0 Site Work Plan Summary

Project Objective. The U.S. Army is conducting studies of the environmental impact of suspected contaminants at Fort McClellan (FTMC) in Calhoun County, Alabama, under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE has contracted IT Corporation (IT) to determine the presence or absence of potential site-specific chemicals (PSSC) at Parcels 97Q, 144Q-X, and 147Q-X.

Parcels 97Q, 144Q-X, and 147Q-X are located west of the Choccolocco Mountains near the eastern boundary of the FTMC Main Post. These parcels are located in the northwestern area of the Choccolocco Corridor. Parcels 97Q and 144Q-X are former ranges. Parcel 147Q-X is a former impact area.

The scope of work for activities associated with the investigative sampling at Parcels 97Q, 144Q-X, and 147Q-X includes the following tasks:

- Conduct a surface and near-surface unexploded ordnance (UXO) survey over all areas to be included in the sampling effort.
- Provide downhole UXO support for all drilling and intrusive sampling to determine buried downhole hazards.
- Collect surface soil, subsurface soil, groundwater, and depositional soil samples.
- Analyze samples for the parameters listed in the site-specific field sampling plan (SFSP) for each individual range.

Attachment 1, "Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities," confirm that the historical records available for the sites have been reviewed and that UXO support is required for all site activities. Additionally, based on all available information, it is anticipated that the potential for chemical warfare agents is low, and no real-time air monitoring for chemical warfare materials will be required

UXO surface sweeps and downhole surveys of soil borings will be required to support field activities at this site. The surface sweeps and downhole surveys will be conducted to identify anomalies for the purpose of UXO avoidance. The site-specific UXO safety plan will be used to

support sample collection activities for this investigation if incidental ordnance, explosives, and UXO are encountered and require avoidance.

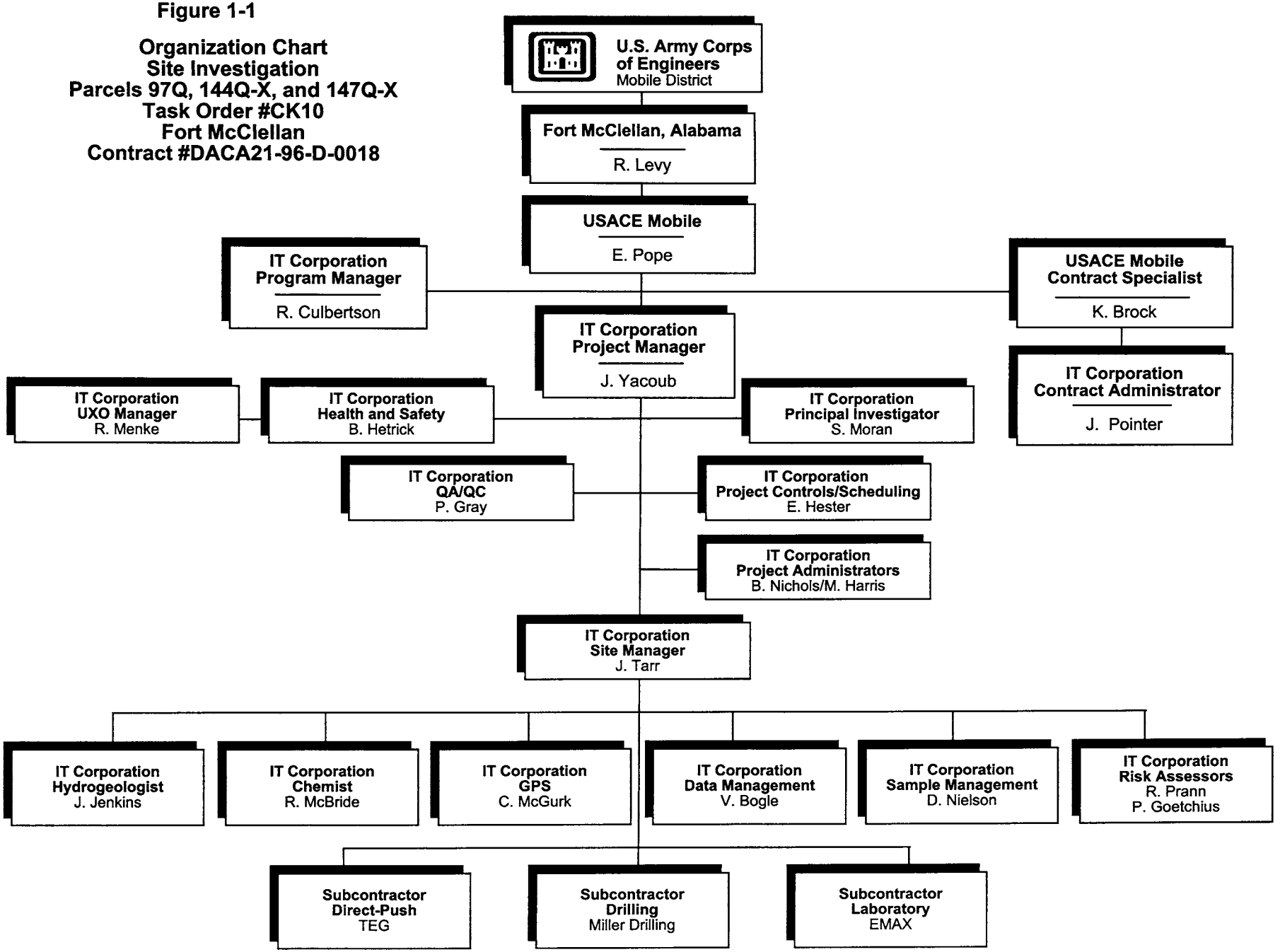
At completion of the field activities and sample analysis, draft and final reports will be prepared to summarize the results of the activities, to evaluate the absence or presence of PSSCs at this site, and to recommend further actions, if appropriate. Investigative sampling reports will be prepared in accordance with current U.S. Environmental Protection Agency (EPA) Region IV, and the Alabama Department of Environmental Management (ADEM) guidelines.

Personnel Requirements. Up to 15 employees are anticipated for this scope of work. See Figure 1-1 for the organization chart.

Note: All personnel on this site shall have received training, informational programs, and medical surveillance as outlined in the installation-wide safety and health plan (SHP) for site investigations at FTMC, and be familiar with the requirements of this site-specific safety and health plan (SSHP). This SSHP must be used in conjunction with the installation-wide SHP, FTMC, Alabama.

Figure 1-1

Organization Chart
Site Investigation
Parcels 97Q, 144Q-X, and 147Q-X
Task Order #CK10
Fort McClellan
Contract #DACA21-96-D-0018



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2.0 Site Characterization and Analysis

2.1 Anticipated Hazards

The activity hazard analysis in Chapter 5.0 contains project-specific practices utilized to reduce or eliminate anticipated site hazards. The activity hazard analysis indicates specific chemical and physical hazards that may be present and encountered during each task from on-site operations. Below each task is a list of hazards and specific actions that will be taken to control the respective hazards. These control measures may include work practice controls, engineering controls, and/or use of appropriate personal protective equipment (PPE). Site control with the use of specific work zones (support zone, contamination reduction zone, and exclusion zone) is addressed in Chapter 7.0 of Appendix A of the *Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama* (IT, 2002a).

Detailed descriptions of each of the parcels to be investigated can be found in the SFSP and should be reviewed to supplement this SSHP. Potential contaminant sources are primarily unknown, but may include nitroexplosives and metals from small arms fire. Lead in soil will be the most likely metal encountered, since live fire may have been conducted at the sites. Additional metals associated with the live fire of ammunition include: arsenic, antimony, and barium. Engineering controls (dust suppression) will be required where site activities generate visible dust emissions from vehicle and equipment operations performed off established roadways, and within the surface danger zone, or range fan firing direction, and impact areas.

Procedures contained in the site-specific UXO safety plan shall be followed for all site activities associated with this investigation.

Table 2-1 contains the toxicological and physical properties of chemicals anticipated or to be used at Parcels 97Q, 144Q-X, and 147Q-X.

2.2 General Site Information

Location of Site. FTMC is located in the foothills of the Appalachian Mountains of northeastern Alabama near the cities of Anniston and Weaver in Calhoun County. FTMC is approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn and 95 miles west of Atlanta, Georgia. FTMC consists of three main areas of government-owned and leased

Table 2-1

Toxicological and Physical Properties of Chemicals
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Arsenic [7440-38-2]	NA	NA	Inh Ing Con	Cough, diarrhea, shortness of breath, vomiting, grey skin. Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.01 mg/m^3 0.01 mg/m^3	(Ca) 0.002 mg/m^3	PEL TLV REL	5 mg/m^3
Antimony [7440-36-0]	NA	NA	Inh Ing Con	Coughing, abdominal pain, burning sensation, vomiting, diarrhea,	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow : Immediate medical attention	0.5 mg/m^3 0.5 mg/m^3 0.5 mg/m^3		PEL TLV REL	50 mg/m^3
Barium [7440-39-3]	NA	NA	Inh Ing Con	Cough, sore throat Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.5 mg/m^3 0.5 mg/m^3 0.5 mg/m^3		PEL TLV REL	NA
Fuel oil (diesel oil, medium)	?	?	Ing Inh Con	Ingestion causes nausea, vomiting, and cramps; depressed central nervous system, headache, coma, death; pulmonary irritation; kidney and liver damage; aspiration causes severe lung irritation, coughing, gagging, dyspnea, substernal stress, pulmonary edema; broncho-pneumonia; excited, then depressed, central nervous system.	Eye: Irrigate promptly Skin: Soap wash Breath: Respiratory support Swallow: Immediate medical attention Aspiration: Immediate medical attention			PEL TLV REL	

Table 2-1

Toxicological and Physical Properties of Chemicals
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Gasoline [8006-61-9]	?	0.3	Inh Ing Con	Intoxication, headaches, blurred vision, dizziness, nausea; eye, nose throat irritation; potential kidney and other cancers. Carcinogenic.	Eye: Irrigate immediately (15 min) Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	300 ppm 300 ppm Ca, lowest feasible conc. (LOQ 15 ppm)	500 ppm 500 ppm	PEL TLV REL	1400 ppm (10% LEL)
Lead {7439-92-1}	N/A	N/A	Inh Ing Con	Lightheadedness; nausea, headache; numbness of the extremities, muscular weakness; irritation of the eyes and nose; dermatitis; chemical pneumonia; giddiness.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.050 mg/m^3 0.050 mg/m^3 0.100 mg/m^3		PEL TLV REL	100 mg/m^3
Isopropyl alcohol (isopropanol) [67-63-0]	10.16	43–200	Inh Ing Con	Mild irritation of the eyes, nose, and throat; drowsiness, dizziness, headache; dry, cracked skin.	Eye: Irrigate immediately Skin: Water flush Breath: Respiratory support Swallow: Immediate medical attention	400 ppm 400 ppm 400 ppm	500 ppm 500 ppm 500 ppm	PEL TLV REL	2,000 ppm
Motor Oil [NA]	?	?	Inh Ing	Irritated eyes, skin, respiratory system; usually only a problem if misted or ingested.	Eye: Irrigate immediately (15 min) Skin: Soap wash immediately Swallow: Immediate medical attention			PEL TLV REL	
Nitric acid [7697-37-2]	11.95	0.3–1	Inh Ing Con	Irritated eyes, mucous membranes, and skin; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion.	Eye: Irrigate immediately Skin: Water flush promptly Breath: Respiratory support Swallow: Immediate medical attention	2 ppm 2 ppm 2 ppm	4 ppm 4 ppm 4 ppm	PEL TLV REL	25ppm

Table 2-1

Toxicological and Physical Properties of Chemicals
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Nitroglycerin [55-63-0]	NA	NA	Inh Ing Con	Abdominal cramps, blue lips and fingernails, dizziness, headache, labored breathing	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	skin 2 mg/m^3 0.46 mg/m^3 skin	0.1 mg/m^3 skin	PEL TLV REL	75 mg/m^3
Portland cement [65997-15-1]	NA	NA	Inh	Fine gray powder that can be irritating if inhaled or in eyes.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	5 mg/m^3 respirable fraction 15 mg/m^3 total dust 10 mg/m^3 10 mg/m^3/ total dust		PEL TLV REL	5000 mg/m^3
Sodium hydroxide [1310-73-2]	NA	NA	Inh Ing Con	Irritated nose; pneumonitis; burns eyes, and skin; temporary loss of hair.	Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention	2 mg/m^3 C 2 mg/m^3 C 2 mg/m^3		PEL TLV REL	10 mg/m^3

NOTE: Additional chemical safety information for arsenic, lead, antimony, barium and nitroglycerin follows Table 2-1.

[a]IP = Ionization potential (electron volts).
[b]Route = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.
[c]TWA = Time-weighted average. The TWA concentration for a normal work day (usually 8 or 10 hours) and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day without adverse effect.
[d]STEL = Short-term exposure limit. A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the TWA is not exceeded.
[e]PEL = Occupational Safety and Health Administration (OSHA) permissible exposure limit (29 CFR 1910.1000, Table Z).
AEL = Airborne Exposure Limit.
TLV = American Conference of Governmental Industrial Hygiene (ACGIH) threshold limit value - TWA.

Table 2-1

Toxicological and Physical Properties of Chemicals
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

REL = National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit.
[f]IDLH (NIOSH) - Immediately dangerous to life or health (NIOSH). Represents the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.
NE = No evidence could be found for the existence of an IDLH (NIOSH Pocket Guide to Chemical Hazards, Pub. 1998).
C = Ceiling limit value which should not be exceeded at any time.
Ca = Carcinogen.
NA = Not applicable.
? = Unknown.
LEL = Lower explosive limits.
LC_{50} = Lethal concentration for 50 percent of population tested.
LD_{50} = Lethal dose for 50 percent of population tested.
NIC = Notice of intended change (ACGIH).

References:

American Conference of Governmental Industrial Hygienists Guide to Occupational Exposure Values, 1998, compiled by the American Conference of Governmental Industrial Hygienists.
Amoore, J. E. Hautula, "Odor as an Aid to Chemical Safety," Journal of Applied Toxicology, 1983.
Clayton, George D., Clayton, F. E., Patty's Industrial Hygiene and Toxicology, 3rd ed., John Wiley & Sons, New York.
Documentation of TLVs and BEIs, American Conference of Governmental Industrial Hygienists, 6th ed., 1998.
Fazzuluri, F. A., Compilation of Odor and Taste Threshold Values Data, American Society for Testing and Materials, 1978.
Gemet, L. J. Van, Compilation of Odor Threshold Values in Air and Water, CIVO, Netherlands, 1977.
Gemet, L. J. Van, Compilation of Odor Threshold Values in Air and Water, Supplement IV, CIVO, Netherlands, 1977.
Lewis, Richard J., Sr., 1992, Sax's Dangerous Properties of Industrial Materials, 8th ed., Van Nostrand Reinhold, New York.
Micromedex Tomes Plus (R) System, 1992, Micromedex, Inc.
National Institute for Occupational Safety and Health Pocket Guide to Chemicals, Pub. 1998, National Institute for Occupational Safety and Health.
Odor Threshold for Chemicals with Established Occupational Health Standards, American Industrial Hygiene Association, 1989.
Respirator Selection Guide, 3M Occupational Health and Safety Division, 1993.
Verschuseren, K., Handbook of Environmental Data on Organic Chemicals, Van Nostrand and Reinhold, 1977.
Warning Properties of Industrial Chemicals—Occupational Health Resource Center, Oregon Lung Association.
Workplace Environmental Exposure Levels, American Industrial Hygiene Association, 1992.

properties: Main Post, Pelham Range, and Choccolocco Corridor (lease terminated in May 1998).

Parcels 97Q, 144Q-X, and 147Q-X are located west of the Choccolocco Mountains near the eastern boundary of FTMC. These parcels are located in the northwestern area of the Choccolocco Corridor.

Duration of Planned Employee Activity. Employee activity duration is anticipated to be less than one month.

Site Descriptions

Parcel 97Q. Parcel 97Q, approximately 4 acres in size, is identified as former small arms range. Interviews with long time FTMC personnel indicated that the Parcel 97Q range was used for small arms training during World War II, the Korean War, and the Vietnam War.

The Parcel 97Q site walks, conducted by IT personnel in December 2001 and January 2002, revealed several features that appear to be related to range-training activities. These features included the following:

- A line of firing positions or target pits, spaced at approximately 20-foot intervals, were observed slightly to the east of Parcel 97Q. The approximate dimensions were 2 feet by 3 feet wide and 6 feet deep. The walls were supported by wooden framework. These features are presumed to have been used as firing positions or target pits. The location of these features appears to be to the east of the firing line identified in the EBS for Parcel 97Q.

- Numerous 5.56-mm blanks were observed by an overgrown road within the western area of Parcel 97Q.

- Numerous wood-framed target boxes were observed in the hillside southwest of the Parcel 97Q boundary identified in the EBS. The target boxes appear to be linearly oriented in several northwest/southeast trending lines.

- An end of range sign (black and white diagonal) located approximately 550 feet southwest of the western boundary of Parcel 97Q identified in the EBS.

Parcel 144Q-X. Parcel 144Q-X, approximately 19 acres in size, is identified as a former range. The footprint of Parcel 144Q-X encompasses about two-thirds of Parcel 97Q, and most of Parcel 147Q-X. The presence of cratered areas within the parcel boundaries suggests that large caliber weapons were fired.

The Parcel 144Q-X site walk, conducted by IT personnel in December 2001 and January 2002, revealed four features, two of which are located within the boundaries of Parcels 97Q and 147Q-X. The observed features are:

- An observation tower located in the east central portion of the parcel
- An airframe mock-up
- A series of firing positions or target pits (located inside Parcel 97Q)
- Area of depressions approximately 3 to 6 feet wide by 2 feet deep (located within Parcel 147Q-X).

Parcel 147Q-X. Parcel 147Q-X, approximately 3 acres in size, is a former impact area. It is not known which range is associated with this impact area. This parcel is located within the footprint of Parcel 144Q-X.

The Parcel 147Q-X site walk, conducted in December 2001, revealed the presence of an area of depressions, approximately 3 to 6 feet wide and 2 feet deep in the northeastern area of Parcel 147Q-X. An ammunition box was present in the bottom of one depression. An expended 40-mm flare and an expended pop flare were present near the depressions. It is speculated that these depressions were used as firing points.

Pathways for Hazardous Substance Dispersion. Possible pathways for hazardous substances in the area are soils, sediments, and groundwater.

3.0 Personal Protective Equipment

The work activities will begin in the following levels of protection. Also, a completed description of Level D, Modified Level D, and Level C PPE is provided.

Task	Initial Level of PPE
Initial UXO avoidance sweep and equipment staging	Level D
Utility clearance	Level D
Surface soil and depositional sampling	Level D
Subsurface soil and groundwater sampling	Modified Level D*
Monitoring well installation and downhole UXO avoidance	Modified Level D*
Surveying	Level D

*Initial level will be raised to Level C or higher if air monitoring results in the breathing zone (BZ) are greater than action levels.

Level D. The minimal level of protection that will be required of IT personnel at the site will be Level D. The following equipment will be used for Level D protection:

- Coveralls or work clothing
- Leather work gloves (when necessary)
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Wear hearing protection (when working near/adjacent to operating equipment).

Modified Level D. The following equipment will be used for Level D-Modified protection:

- Permeable Tyvek, Kleenguard, or its equivalent
- Latex boot covers

- Nitrile, heavy work, or latex gloves
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment).

Note: In addition to Modified Level D PPE, the operator of high-pressure water jetting equipment (pressure washers) shall wear metatarsal guards for protection of the legs and feet and a face shield for protection from splashes.

Level C. Level C protection will not be used unless air-monitoring data indicate the need for upgrade; however, the equipment shall be readily available on site. The following equipment will be used for Level C protection:

- National Institute of Occupational Safety and Health/Mine Safety and Health Administration-approved full-face, air-purifying respirators equipped with organic vapor/acid gas cartridge in combination with high-efficiency particulate air filter (Survivair part numbers: 100300, 106010 and 140079, respectively)
- Hooded, Saran-coated Tyvek, taped at gloves, boots, and respirator
- Nitrile gloves (outer)
- Latex or lightweight nitrile gloves (inner)
- Neoprene steel-toed boots or polyvinyl chloride overbooties/steel-toed safety boots
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment).

Note: In addition to Level C PPE, the operator of high-pressure water jetting equipment (pressure washers) shall wear metatarsal guards for protection of the legs and feet.

4.0 Site Monitoring

The environmental contaminants of concern resulting from former activities at Parcels 97Q, 144Q-X, and 147Q-X are primarily unknown but based on land use history probably include nitroexplosives and lead.

Table 4-1 contains action levels for site monitoring associated with this investigation.

Chemical. The site safety and health officer (SSHO) or qualified task geologist shall perform air monitoring during the performance of site activities and ground intrusive operations. A calibrated photo ionization detector (i.e., Hnu DL-101 or equivalent) organic vapor analyzer will be utilized to monitor the sampling locations and breathing zones (BZ) to determine if any organic material may be present that would necessitate upgrading of the protection level. Screening for volatile compounds (VOC) during the subsurface soil sampling direct-push method will provide important information for potential employee exposure before well installation using hollow-stem auger rigs. Elevated VOCs measured during direct-push sampling must be discussed with the site manager and SSHO. This will enable advance planning before auger cuttings containing VOCs are generated at the drill location. Should significant levels of VOCs be detected in excess of the action limits, samples should be collected and analyzed before proceeding with well installation. A calibrated combustible gas/oxygen indicator will be utilized to monitor the borehole, work areas, and BZs to determine if any combustible/flammable levels may be present that would necessitate evacuation of the work area. A Miniram PDM-3 or equivalent aerosol monitor shall be used to monitor airborne dust, since lead is a potential concern. Table 4-2 contains the air monitoring frequency and location for site monitoring at Parcels 97Q, 144Q-X, and 147Q-X.

Unexploded Ordnance. UXO support for sampling activities are specified in the site-specific UXO safety plan developed for Parcels 97Q, 144Q-X, and 147Q-X. The UXO specialists will perform UXO avoidance sweeps prior to moving the heavy equipment onto the site. During this operation, UXO on the surface will be detected and marked for avoidance during field operations. Additionally, downhole magnetometer surveys will be performed to detect metal objects in the path of sampling equipment or boring apparatus. The sampling/boring location will be moved to avoid subsurface metal objects. The practice of UXO avoidance shall be implemented for all intrusive activities.

If UXO is encountered, personnel will contact the site manager and UXO specialist immediately. Personnel will evacuate the immediate area and secure it.

Table 4-1

Action Levels
Parcels 97Q, 144Q-X and 147Q-X
Fort McClellan, Calhoun County, Alabama

When in Level C PPE

Analyte	Action Level	Required Action[a]
VOCs (volatile organic compound)	≥ 10 ppm above background in breathing zone (BZ)	Stop work, evacuate work area, upgrade to Level B; Notify CIH
Dust	> 2.5 mg/m^3 above background in BZ	Normal operations, initiate dust control to minimize migration.
LEL (lower explosive limit)	< 10 % LEL ≥ 10 % LEL	Normal operations Stop work, identify source

When in Level D Modified/D PPE

Analyte	Action Level	Required Action[b]
VOCs	≥ 1 ppm above background in BZ	Stop activities, suspend work activities for 15 to 30 minutes, if readings are sustained then upgrade to Level C PPE; Notify CIH
Dust	≥ 0.3 mg/m^3 above background in BZ	Stop work, Initiate dust control, upgrade to Level C PPE if dust control is not effective; Notify CIH
LEL (lower explosive limit)	< 10 % LEL ≥ 10 % LEL	Normal operations Stop work, identify source. Monitor for VOC's

When in Support Zone

Analyte	Action Level	Required Action
VOCs	≥ 1 ppm above background in BZ	Evacuate support zone and re-establish perimeter of exclusion zone.
Dust	> 0.3 mg/m^3 above background in BZ	Stop work, Initiate dust control

[a] Four instantaneous peaks in any 15-minute period or a sustained reading for 5 minutes in excess of the action level will trigger a response.

[b] Contact with the H&S manager must be made prior to continuance of work. The H&S manager may then initiate perimeter/integrated air sampling along with additional engineering controls..

No one is permitted to downgrade levels of PPE without authorization from the H&S manager.

Table 4-2

Air Monitoring Frequency and Location
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Work Activity	Instrument	Frequency	Location
Staging equipment and UXO avoidance sweeps	OV Monitor Miniram	Initially for area Periodically	Breathing zone (BZ) of employees
Sampling (surface and depositional soil and groundwater)	OV Monitor Miniram	Periodically Periodically	BZ of employees BZ of employees
Groundwater Monitoring Well Installation and Subsurface Soil Sampling	OV Monitor Miniram LEL/ O_2	Continuously Periodically Periodically	BZ of employees BZ of employees Bore hole

OV = Organic vapor.
Miniram = Aerosol (dust) monitor.
LEL/O_2 = Lower explosive limit/oxygen level.

5.0 Activity Hazard Analysis

The attached activity hazard analysis (Table 5-1) is provided for the following activities:

- Initial UXO avoidance sweep and equipment staging
- Installation of monitoring wells
- Subsurface soil, groundwater, surface soil and depositional sampling
- Surveying
- Moving and shipping collected samples
- Disposal of investigative derived waste (forklift operations)
- High-pressure water jetting operations.

All injuries and illnesses must be immediately reported to the site manager or the SSHO, who will then notify off-site personnel and organizations as necessary.

If hospital care must be provided, the victim shall be treated at Northeast Regional Medical Center. Directions to the hospital are provided in Figure 5-1.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging	Slip, trip, and fall hazards	• Determine best access route before transporting equipment. • Practice good housekeeping; keep work area picked up and clean as feasible. • Continually inspect the work area for slip, trip, and fall hazards. • Look before you step; ensure safe and secure footing.
	Heavy lifting	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment.
	Falling objects	• Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots.
	Flying debris, dirt, dust, etc.	• Wear safety glasses/goggles; ensure that eyewash is in proper working condition.
	Pinch points	• Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cuts/bruises	• Use cotton or leather work gloves for material handling.
	Bees, spiders, and snakes	• Inspect work area carefully and avoid placing hands and feet into concealed areas.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Fire	• Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
	Hazard communication	• Label all containers as to contents and dispose of properly. • Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site.
	Noise	• Sound levels above 85 decibels (dBA) mandates hearing protection.
	Lighting	• Adequate lighting will be provided to ensure a safe working environment.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Cold stress	• Workers should wear insulated clothing when temperatures drop below 40 degrees Fahrenheit (°F). • Drink warm beverages on breaks. Refrain from drinking caffeinated beverages. • Remove wet clothing promptly. • Take breaks in warm areas. • Reduce work periods as necessary. • Layer work clothing.
	Poison ivy/oak/sumac	• Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	Heat rash	• Keep the skin clean and dry. • Change perspiration-soaked clothing, as necessary. • Bathe at end of work shift or day. • Apply powder to affected area.
	Heat cramps	• Drink plenty of cool fluids even when not thirsty. • Provide cool fluid for work crews. • Move victim to shaded, cool area.
	Heat exhaustion	• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature). • Set up work/rest periods. • Use the □buddy system.□ • Allow workers time to acclimate. • Have ice packs available for use. • Take frequent breaks.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Heat stroke	• Evaluate possibility of night work. • Perform physiological monitoring on workers during breaks. • Wear body cooling devices.
	Contact with moving equipment/vehicles	• Work area will be barricaded/demarcated. • Equipment will be laid out in an area free of traffic flow. • Barricades shall be used on or around work areas when it is necessary to prevent the inadvertent intrusion of pedestrian traffic. • Barriers shall be used to protect workers from vehicular traffic. • Barriers shall be used to guard excavations adjacent to streets or roadways. • Flagging shall be used for the short term (less than 24 hours) to identify hazards until proper barricades or barriers are provided. • Heavy equipment shall have backup alarms.
	Forklift operations	• Use qualified and trained forklift operators in accordance with Health and Safety Policy HS820. • The operator shall not exceed the load capacity rating for the forklift. • The load capacity shall be clearly visible on the forklift. • Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement.
	Portable electric tools	• Portable electric tools that are unsafe due to faulty plugs, damaged cords, or other reasons, shall be tagged (do not use) and removed from service. • Portable electric tools and all cord and plug connected equipment shall be protected by a ground-fault circuit interrupter (GFCI) device. • Electrical tools shall be inspected daily prior to use.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Extension cords	• Extension cords that have faulty plugs, damaged insulation, or are unsafe in any way shall be removed from service. • Cords shall be protected from damage from sharp edges, projections, pinch points (doorways), and vehicular traffic. • Cords shall be suspended with a nonconductive support (rope, plastic ties, etc,). • Cords shall be designed for hard duty. • Cords shall be inspected daily.
	Lightning strikes	• Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground). • Seek shelter in a building if possible. • Stay away from windows. • If available, crouch under a group of trees instead of one. • Remain 6 feet away from tree trunk if seeking shelter beneath tree(s). • If in a group, keep 6 feet of distance between people.
	Thunderstorms, tornados	• Listen to radio or TV announcements for pending weather information. • Cease field activities during thunderstorm or tornado warnings. • Seek shelter. Do not try to outrun a tornado.
Surveying	Slip, trip, and fall hazards	• Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe boots when working in the field. • Provide adequate lighting in all work areas. • Whenever possible, avoid routing cords and hoses across walking pathways. • Flag or cover inconspicuous holes to protect against falls. • Work areas will be kept clean and orderly. • Garbage and trash will be disposed of daily in approved refuse containers. • Tools and accessories will be properly maintained and stored. • Work areas and floors will be kept free of dirt, grease, and slippery materials.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Surveying (continued)	Traffic accidents	• Place physical barrier (i.e., barricades, fencing) around work areas regularly occupied by pedestrians. • If working adjacent to roadways, have workers wear fluorescent orange vests. • Use warning signs or lights to alert oncoming traffic. • Assign flag person(s) if necessary to direct local traffic. • Set up temporary parking locations outside the immediate work area. • Motor vehicle operators shall obey all posted traffic signs, signals, and speed limits. • Pedestrians have the right-of-way. • Wear seat belts when vehicles are in motion.
	Wildlife hazards	• Workers should be cautious when driving through the site in order to avoid encounters with passing animals.
	Biological hazards	• Walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads).
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	UXO	• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Groundwater Sampling	Cross-contamination and contact with potentially contaminated materials	• Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Avoid skin contact with water. • Handle samples with care. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	Cut hazards	• Use care when handling glassware. • Wear adequate hand protection.
	Hazard communication	• MSDSs shall be obtained for chemicals brought on site. • Label all containers as to contents.
	Strains/sprains	• Use the proper tool for the job being performed. • Get assistance if needed. • Avoid twisting/turning while pulling on tools, moving equipment, etc.
	Spills/residual materials	• Absorbent material and containers will be kept available where leaks or spills may occur.
	Lighting	• Adequate lighting will be provided to ensure a safe working environment.
	Unattended worker	• Use "buddy system" - visual contact will be maintained with the sampling technician during sampling activities.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Surface Soil and depositional Sampling	Cross-contamination and contact with potentially contaminated materials	• Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	Cut hazards	• Use care when handling glassware. • Wear adequate hand protection.
	Slip, trip, and fall hazards	• Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe/shank boots when working in the field. • Whenever possible, avoid routing cords and hoses across walking pathways. • Flag or cover inconspicuous holes to protect against falls.
	Bees, spiders, and snakes	• Workers shall inspect the work area carefully and avoid placing hands and feet into concealed areas. • Evaluate need for sensitive workers to have prescribed antibiotic or medicine to combat onset of symptoms.
	Poison ivy/oak/sumac	• Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	Cold stress	• Workers should wear insulated clothing when temperatures drop below 40°F. • Drink warm beverages on breaks. Refrain from drinking caffeinated beverages. • Remove wet clothing promptly. • Take breaks in warm areas. • Reduce work periods as necessary. • Layer work clothing.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Surface Soil and depositional Sampling (continued)	Access/egress hazards	• Use qualified and trained bushhog operator. • Keep employees out of the bushhog work area. • Utilize good housekeeping practices. • Keep aisleways, pathways, and work areas free of obstruction. • Clean ice or snow off of walkways or work stations. • Use appropriate footwear for the task assigned.
	Heat rash	• Keep the skin clean and dry. • Change perspiration-soaked clothing, as necessary. • Bathe at end of work shift or day. • Apply powder to affected area.
	Heat cramps	• Drink plenty of cool fluids even when not thirsty. • Provide cool fluid for work crews. • Move victim to shaded, cool area.
	Heat exhaustion	• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature). • Set up work/rest periods. • Use the buddy system. • Allow workers time to acclimate. • Have ice packs available for use. • Take frequent breaks.
	Heat stroke	• Evaluate possibility of night work. • Perform physiological monitoring on workers during breaks. • Wear body cooling devices.
	Lightning strikes	• Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground). • Seek shelter in a building if possible. • Stay away from windows. • If available, crouch under a group of trees instead of one single tree. • If in a group, keep 6 feet of distance between people.
	UXO	• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
		• If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist.
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (direct push)	Overhead hazards	• Make sure no obstacles are within radius of boom. Always stay a safe distance from power lines.
	Faulty or damaged equipment being utilized to perform work	• All machinery or mechanized equipment will be inspected by a competent mechanic and be certified to be in safe operating condition. • Equipment will be inspected before being put to use and at the beginning of each shift. • Faulty/unsafe equipment will be tagged and if possible locked out. • Drill rigs shall be equipped with reverse signal alarm, backup warning lights, or the vehicle is backed up only when an observer signals it is safe to do so.
	Uneven terrain, poor ground support, inadequate clearances, contact with utilities	• Inspections or determinations of road conditions and structures shall be made in advance to ensure that clearances and load capacities are safe for the passage or placing of any machinery or equipment. • All mobile equipment and areas in which they are operated shall be adequately illuminated. • Aboveground and below ground utilities will be located prior to staging equipment. • Whenever the equipment is parked, the parking brake shall be set. • Equipment parked on inclines will have the wheels chocked. • Inspect brakes and tire pressure on drill rig before staging for work.
	Inexperienced operator	• Machinery and mechanized equipment shall be operated only by designated personnel. • Operators shall inform their supervisor(s) of any prescribed medication that they are taking that would impair their judgment.
	Jacks/outriggers	• Ensure proper footing and cribbing. • Ensure outriggers are fully extended and adequate load on outrigger pads applied.
	Falling objects	• Remove unsecured tools and materials before raising or lowering the derrick. • Stay alert and clear of materials suspended overhead.
	Pinch points	• Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert at all times!

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (direct push) (continued)	Fire	• Mechanized equipment shall be shut down prior to and during fueling operations. • Have fire extinguishers inspected and readily available.
	Fall hazards	• Personnel are not allowed to work off machinery or use them as ladders. • Use fall protection when working above 6 feet.
	Contact with rotating or reciprocating machine parts	• Use machine guards; use long-handled shovels to remove auger cuttings. • Safe lockout procedures for maintenance work.
	Heavy lifting	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	• Practice good housekeeping, keep work area picked up and clean as feasible. • Continually inspect the work area for slip, trip, and fall hazards.
	Contact with potentially contaminated materials	• Real-time air monitoring will take place. If necessary, proper personal protective clothing and equipment will be utilized. • Stop immediately at any sign of obstruction. • Do not breathe air surrounding the boring unless necessary. • Upgrade to respirator if necessary and avoid skin contact with soil cuttings. Wear gloves. • Stay clear of moving parts of rig.
	Drum handling	• Be careful not to breathe air from around open drum any more than necessary. Monitor with photoionizaton detector/flame ionization detector (PID/FID) equipment and upgrade to respirator if necessary. • When filling a drum (with either soil or water), be careful not to make contact with the contained waste. Wear appropriate gloves. Make sure lid or bung of drum is secure. • If moving a drum unassisted, be sure to leverage properly, use proper lifting techniques, and wear safety glasses and steel-toed boots. • When using a drum dolly, make sure straps and lid catch is securely attached. Leverage properly when tilting drum. Be sure toes stay away from drum.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (direct push) (continued)	Cross-contamination and contact with potentially contaminated materials	• Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	UXO	• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist.
	Cut hazards	• Use care when handling glassware. • Wear adequate hand protection.
Moving and Shipping Collected Samples	Heavy lifting	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Pinch points	• Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cut hazards	• Wear adequate hand protection. Use care when handling glassware.
	Hazard communication	• Label all containers as to contents and associated hazards.
	Heavy lifting	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Material Storage	Flammable and combustible liquids	• Store in NO SMOKING AREA. • Fire extinguisher readily available. • Transfer only when properly grounded and bonded.
Disposal of Investigation-Derived Waste (IDW) (Forklift Operation)	Personnel injury, property damage, and/or equipment damage	• Use qualified and trained forklift operators. • The operator shall not exceed the load capacity rating for the forklift. • The load capacity shall be clearly visible on the forklift. • Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement.
	Cross-contamination and contact with potentially contaminated materials	• Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	Cut hazards	• Use care when handling glassware. • Wear adequate hand protection.
High-Pressure Water Jetting Operations	Heavy lifting	• Use proper lifting techniques. • Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	• Good housekeeping shall be implemented. • The work area shall be kept clean as feasible. • Inspect the work area for slip, trip, and fall hazards.

Table 5-1

Activity Hazard Analysis
Parcels 97Q, 144Q-X, and 147Q-X
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
High-Pressure Water Jetting Operations (continued)	Fueling	• Only approved safety cans shall be used to store fuel. • Do not refuel equipment while it is operating. • Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
	Faulty or damaged equipment	• Equipment shall be inspected before being placed into service and at the beginning of each shift. • Preventive maintenance procedures recommended by the manufacturer shall be followed. • A lockout/tagout procedure shall be used for equipment found to be faulty or undergoing maintenance.
	High-pressure water	• Jetting gun operator must wear appropriate PPE including hard hat, impact-resistant safety glasses with side shields, water-resistant clothing, metatarsal guards for feet and legs, and hearing protection (if appropriate). • One standby person shall be available within the vicinity of the pump during jetting operation. • The work area shall be isolated and adequate barriers will be used to warn other site personnel.
	Unqualified operators	• Only qualified and trained personnel are permitted to operate machinery and mechanized equipment associated with water jet cutting and cleaning.
	Out of control equipment	• No machinery or equipment is permitted to run unattended. • Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded.
	Noise	• Sound levels above 85 dBA mandates hearing protection by nearby site personnel.
	Activation during repairs	• All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done.
	Pinch points	• Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert and clear of materials suspended .
	Falling objects	• Hard hats are required by site personnel. • Stay alert and clear of material suspended overhead.
	Flying debris	• Impact-resistant safety glasses with side shields are required.
	Contact with potentially contaminated materials	• All site personnel will wear the appropriate PPE.

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ENGR. CHCK. BY: S. MORAN
INITIATOR: M. MALONEY
PROJ. MGR.: J. YACOUB
DWG. NO.: ...\796887es.341
PROJ. NO.: 796887
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PELHAM RANGE

MAIN POST

CHOCCOLOCCO CORRIDOR

GALLOWAY GATE
(OPEN 6am-6pm M-F)

BALTZELL GATE
(OPEN)

BAKER GATE
(CLOSED)

SUMMERAL GATE
(CLOSED)

PARCELS 97Q, 144Q-X
AND 147Q-X

NORTHEAST ALABAMA REGIONAL
MEDICAL CENTER

LEGEND:

- ROUTE TO NORTHEAST ALABAMA REGIONAL MEDICAL CENTER
- U.S. HIGHWAY
- HOSPITALS
- INVESTIGATION SITE

DRIVING DIRECTIONS FROM BALTZELL GATE ROAD TO THE NORTHEAST ALABAMA MEDICAL CENTER

- LEAVING FORT MCCLELLAN ON BALTZELL GATE ROAD, TURN LEFT (SOUTH) ONTO AL HWY 21
- GO ~ 2.5 MILES WHERE AL HWY 21 MERGES WITH U.S. HWY 431 AND CONTINUE SOUTH
- CONTINUE SOUTH ON AL21/US431 FOR ~ 2.7 MILES
- TURN LEFT ONTO EAST 10th STREET
- GO ~ 0.2 MILE TO MEDICAL CENTER ON RIGHT
- NORTHEAST ALABAMA REGIONAL MEDICAL CENTER, 400 EAST 10th STREET
- PHONE NUMBER : (256) 235-5121

SCALE
0 8000 16000 FEET

FIGURE 5-1
HOSPITAL EMERGENCY ROUTE

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT CORPORATION
A Member of The IT Group

ATTACHMENT 1

Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities

Site Name: Fort McClellan, Parcel 97Q, 144Q-X, and 147Q-X

Job Number: 796887 **Date: 10-Jan-02**

Name of person completing form: Maura Maloney **Title: Geologist**

Signature: Maura Q Maloney

1a. Have the historical records available for this HTRW site been reviewed?	Yes	No
	☒	☐

If the answer to **1a.** is yes, proceed to **1b.**
If the answer to **1a.** is no, review site information prior to completing this form.

1b. Is there recent information (site walk, worker interviews, etc.) that indicates a potential OE/CWM hazard at this site?	Yes	No
	☒	☐

Proceed to **2.**

2. According to the records review, is this site known or suspected to have been used for:

	Yes	No
2a. Manufacturing, production, or shipping of conventional or chemical warfare materiel (CWM) OE:	☐	☒
Live fire testing of any ordnance:	☒	☐
Conventional or CWM OE training:	☒	☐
Storage of conventional or CWM OE:	☐	☒
Disposal or demilitarization of conventional or CWM OE:	☐	☒
Other (specify):		

	Yes	No
2b. Manufacturing, production, or shipping of chemical agent:	☐	☒
Research or testing of chemical agent:	☐	☒
Chemical agent related training:	☐	☒
Storage of chemical agent:	☐	☒
Disposal or demilitarization of chemical agent:	☐	☒
Other (specify):		

Any **2a** question answered "YES" indicates UXO support is required for all site activities. If all **2a** questions are answered "NO", UXO support may not be required. Refer to Installation-Wide Safety and Health Plan (SHP) for additional information concerning UXO support. Proceed to question **2b.**

Any **2b** question answered "YES" requires the remainder of this form to be completed. If all **2b** questions are answered "NO", real-time monitoring for chemical agent will not be required and completing the remainder of this form is not required. Refer to SHP for additional information concerning agent monitoring.

Additional space for notes and explanations on page 4.
Continue to page 2 of 4 –

3. For sites where the manufacturing, testing, storage, or disposal of CWM is suspected:	**Yes**	**No**
Is there evidence that the CWM is/was containerized in potentially unexploded ordnance:	☐	☐
Is there evidence that the CWM is/was containerized in nonexplosive containers:	☐	☐
Is there evidence that the CWM is open to the environment (i.e., in an open container or free liquid/solid in the soil/water):	☐	☐
Is there evidence that the CWM hazard has been removed from the site or that the site has been decontaminated:	☐	☐
Has the site been previously monitored or sampled for chemical agent or agent breakdown products:	☐	☐
For any "YES" above, was the agent or breakdown product identified?	☐	☐

For any "Yes", list types of agent (mustard, lewisite, etc.) and the form (in ordnance, in drum, etc.) the CWM is expected to be found (or state "unknown"):

List agent breakdown products identified:

4. Defining the Potential for the Presence of CWM:	**Agent Monitoring Requirements for Site Activities:**
4a. High Presence Potential – Definition: CWM is known or highly suspected to be present at the site in a condition (within ordnance and/or nonexplosive container, or in an uncontainerized form in sufficient volume that weathering of the product has not rendered it harmless) that will cause potential harm to personnel if it is encountered.	Mandatory personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4b. Moderate Presence Potential - Definition: CWM is suspected to have been present at the site, but has been previously removed and/or decontaminated, or has been open to the environment such that it is expected to have degraded and been rendered harmless.	The need for personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples will be reviewed on a site-by-site basis. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4c. Low Presence Potential – Definition: No indications that CWM will be present in quantity or reactivity (in munitions, projectiles, drums, etc.).	No specific personal or area monitoring for chemical agents required beyond what is specified in the SHP.

Continue to page 3 of 4 -

Site Name: Parcels 97Q, 144Q-X, and 147Q-X

Job Number: 796887 **Date: 10-Jan-02**

Based on the information available for this site, including information gathered during completion of this form, the potential for CWM to be present at this site, as defined above, is expected to be: ***LOW***

Exceptions/Explanations: (additional space for notes and explanations on page 4)

5. Based on the information provided in questions 1 through 5, above, the following guidelines will be used for establishing PPE requirements for activities to be performed at this site; Specific details are provided in the SSHP:	
5a. High Exposure Potential - High exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "High Exposure Potential" will be Level B (supplied air) or Level C (full-face respirator with HEPA/Acid Gas/OV cartridges w/ emergency egress hood) and chemically resistant coveralls. Specific PPE requirements are in the SSHP for this site.
5b. Moderate Exposure Potential - Moderate exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "Moderate Exposure Potential" will be Modified Level D (disposable coveralls and emergency egress hood) carried by all personnel. Specific PPE requirements are in the SSHP for this site.
5c. Low Exposure Potential - Low exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the IT CIH, no additional PPE requirements above those stated in the SSHP are needed for sites identified as having "Low Exposure Potential." Specific PPE requirements are in the SSHP for this site.

Based on all available information, the exposure potential at this site is considered to be: ***LOW***

Exceptions/Explanations: Parcels 97Q and 144Q-X are former ranges. Parcel 147Q-X is a former impact area. Historical records show no evidence that CWM was manufactured, used, stored, or disposed at Parcels 97Q, 144Q-X, and 147Q-X.

Review Signatures: IT UXO Technical Manager _____ Date: 22 JAN 02 IT H&S Specialist _____ Date: 3/28/02

Site Name: Parcels 97Q, 144Q-X, and 147Q-X

Job Number: 796887

Date: 10-Jan-02

Additional Notes and Explanations:

Parcels 97Q, 144Q-X, and 147Q-X are located west of the Choccolocco Mountains near the eastern boundary of Fort McClellan in the northwest portion of the Choccolocco Corridor. Parcel 97Q is a former small arms range with a defined firing line. Pasrcel 144Q-X is a former range. It is presumed that large caliber weapons were fired at Parcel 144Q-X due to the presence of nearby cratered areas. Parcel 147Q-X is a former impact area. During the December 2001 site visit, several features associated with range training were observed. These features included a line of firing positions or target pits, the dimensions of these feautures were 2 feet by 3 feet wide and 6 feet deep, an observation tower, and a area of crater like depressions. An expended 40-mm flare and an expended pop flare were present near the depressions. An ammunition box was observed within one depression.